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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Klaus Klein

KW-11PCT

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EXAMINER

MENDEZ, ZULMARIAM

ART UNIT

PAPER NUMBER

1795

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/520,723	<b>Applicant(s)</b> KLEIN, KLAUS	
	<b>Examiner</b> ZULMARIAM MENDEZ	<b>Art Unit</b> 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 June 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-25 is/are pending in the application.
- 4a) Of the above claim(s) 16-25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-3, 5-9, 14 and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Starcevic (US Patent no. 6,846,418).

With regard to claims 1, 14 and 15, Starcevic teaches a method for treating acidic and metallic waste water from pickling plants of steel and stainless steel (abstract; col. 1, lines 6-14; col. 3, lines 33-36) having the following steps: a) converting the free acids present in the liquid waste streams to be treated into the metal salt form before recycling – the process includes adding an alkaline solution or gas to bind the free acids and obtain a metal salt (col. 1, lines 6-13; col. 2, lines 14-28), b) separating water from the largely acid-free metal salt solution obtained in order to obtain a concentrated metal salt solution (col. 4, lines 2-6 and 50-52), and c) supplying the concentrated metal salt solution to a thermal method to obtain metal oxides and free acids (col. 1, lines 54-66), and wherein the waste stream from the pickling baths to be recycled is separated in a suitable separating system into a first partial stream having

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the metal salts to be recycled and a second partial stream having free acids (abstract; col. 2, lines 14-28), which is conducted back into the pickling bath (col. 4, lines 32-37).

With regard to claim 2, Starcevic discloses wherein the acid waste streams from the pickling baths and the rinsing baths/air washers are each subjected to a separate treatment (col. 4, lines 12-37; see figure 1).

With regard to claim 3, Starcevic teaches wherein the separated water is returned into the method for reuse (col. 4, lines 12-37; figures 1-2).

With regard to claim 5, Starcevic further teaches wherein the residues of free acids existing in the first partial stream are converted into metal salts according to step a) using metal hydroxides (col. 6, lines 50-65).

With regard to claim 6, Starcevic discloses wherein the treated first partial stream having metal salts is converted in a system for separating water after step b) into a concentrated metal salt solution wherein the process solubilizes various metals and produces a stream of high metal ion content (col. 3, lines 26-63).

With regard to claim 7, Starcevic teaches wherein the water separated in step b) is returned to the separating system as process water in the form of a slightly acidic distillate (col. 3, lines 45-48; col. 4, lines 12-37; figures 1-2).

With regard to claim 8, Starcevic discloses wherein the first partial stream is mixed before step a) with the acid waste stream from the rinsing baths/air washers. As shown in figure 1, the streams of waste water from the rinsing bath as well as the

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stream from the pickling bath are mixed before converting the free acid into the metal salt (col. 2, lines 14-28; col. 4, lines 12-37).

With regard to claim 9, Starcevic discloses wherein the concentrated metal salt solution from the pickling bath is supplied to a thermal method for decomposing the salts into metal oxides and free acids according to step c) (col. 1, lines 54-57).

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Starcevic, as applied to claim 1 above, in view of Milton (US Patent no. 4,655,928).

With regard to claim 10, Starcevic teaches wherein the rinsing water and/or the waste water of the rinsing baths/air washers are neutralized using a chemical, such as

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an alkaline solution, but fails to teach wherein such chemical is a sodium hydroxide solution or potassium hydroxide solution.

Milton discloses a process for regenerating acids from pickling solutions (abstract, claim 9) wherein the rinse water is first treated in an acid solution and is then neutralized in a solution of sodium hydroxide in order to precipitate metals in the solution which can then be removed to provide an appropriate pre-treatment and produce pure rinse water for recycle (col. 7, lines 32-59). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to neutralize the rinsing water with sodium hydroxide, as taught by Milton, in order to precipitate metals in the solution which can then be removed to provide an appropriate pre-treatment and produce pure rinse water for recycle.

With regard to claim 11, Starcevic discloses wherein the precipitated and filtered metal salts are supplied to step a), particularly as metal hydroxides, for converting the free acid into metal salts (col. 3, lines 26-32).

With regard to claim 12, Starcevic discloses wherein the treated first partial stream having metal salts is converted in a system for separating water after step b) into a concentrated metal salt solution wherein the process solubilizes various metals and produces a stream of high metal ion content (col. 3, lines 26-63) and wherein the water separated is returned to the separating system as process water in the form of a slightly acidic distillate (col. 3, lines 45-48; col. 4, lines 12-37; figures 1-2).

With regard to claim 13, Starcevic teaches wherein the concentrated salt solution is converted in a system for salt decomposition, such as an ionic exchanger in order to obtain a better cleanness for reuse in the process (col. 6, lines 35-42).

### ***Response to Arguments***

#### ***Claim Rejections - 35 USC § 112***

6. The previous rejection of claims 6 and 12 under 35 U.S.C 112, first paragraph has been withdrawn in view of applicant's clarification provided on Remarks filed on June 18, 2010.

#### ***Claim Rejections - 35 USC § 102***

7. Applicant's arguments filed on June 18, 2010 have been fully considered but they are not persuasive. The applicant argues that the Starcevic fails to teach or suggest a step to produce a stream of free acids which is conducted back into the pickling bath; separating water from an acid free metal salt solution to obtain a concentrated metal salt solution and subjecting the metal salt solution to a thermal method to obtain metal oxides and free acids.

In response, the examiner respectfully disagrees. As discussed above, Starcevic discloses a method for treating acidic and metallic waste water from picking baths (abstract) wherein acids in a waste water stream are bonded by ammonia added to the waste water. The use of ammonia enables the acids, i.e. hydrofluoric acid to be extracted from the waste water stream (col. 1, lines 54-64), the resulting waste water is

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separated into a stream with high metal content which is further fed to a regeneration plant to undergo a pyrohydrolytic/thermal treatment (col. 1, lines 54-59). The resulting stream containing a high metal content may further be concentrated by removing water to produce a stream with a higher concentration of metal salts (col. 4, lines 2-6).

Starcevic further discloses a step to produce a stream of free acids which is conducted back into the pickling bath (col. 4, lines 32-37).

### ***Conclusion***

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

9. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ZULMARIAM MENDEZ whose telephone number is (571)272-9805. The examiner can normally be reached on Tuesday-Friday from 9am to 7pm.

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11. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexa Neckel can be reached on 571-272-1446. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

12. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Harry D Wilkins, III/  
Primary Examiner, Art Unit 1795

/Z. M./  
Examiner, Art Unit 1795